

Symposium 2: Nutrition and Chronic Disease – Part A

Nutritional factors in the development of age-related eye disease

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Nutritional associations have been found with two major eye diseases, age-related macular degeneration (AMD), the leading causes of severe visual impairment (blindness) and cataract, the principal cause of mild to moderate visual impairment. These data have derived from population-based studies of older communities and samples, clinic-based case-control studies, and from the findings of a recent, large randomized clinical trial; the Age Related Eye Disease Study (AREDS).

For AMD, some population-based and case-control studies suggested protective roles for diet or supplementary zinc and antioxidants, although these data have been variable and relatively inconsistent. Benefit, however, was confirmed in the AREDS trial, which demonstrated, over 6 years, up to a 25% reduction in development of advanced disease or severe visual impairment in the group taking large, combined doses of zinc and vitamins A (as beta-carotene), C and E. There is now also increasing circumstantial evidence for beneficial effects from the xanthophyll carotenoids, lutein and zeaxanthin, which were not incorporated in the AREDS supplement. Many studies have also shown protective effects on AMD from reduced dietary saturated fat and regular consumption of fish.

For cataract, although earlier studies suggested potential benefits from increased dietary intakes of antioxidants, no benefit from supplements was confirmed in the AREDS trial. However, other studies (but no trials yet) have indicated stronger potential roles for dietary protein intake and B group vitamins in the pathogenesis of age-related cataract.

These data will be reviewed, including findings from an Australian population (the Blue Mountains Eye Study) and randomized clinical trial (VECat). Evidence-based principles for practical nutritional advice in older persons with eye disease will be outlined.